

**STATE ADVISORY COUNCIL ON
SCIENCE AND TECHNOLOGY MEETING**
Monday, April 18, 2005
2:00 – 4:30 pm
State Capitol – House of Reps., Rm #125 (West Bldg)

Minutes

In Attendance:

Greg Critchfield, Acting Chair
Tami Goetz, SLCC
Sheryl Hohle, Bio Catalogia
Lucille Stoddard, USHE
Dave Buhler, USHE
Martin Frey, DBED

Troy Takach, Design Jug
Ashok Khandkar, Amedica Corp.
Brent Brown, U of U
Gary Hooper, BYU
Brett Moulding, USOE
Myrna Hill, DBED Staff

Excused:

Michael Brehm, Ray Gesteland, Brent Miller, Sue Johnson, Bill Barnett

I. Welcome and Approval of Minutes

Greg Critchfield, Acting Chair, called the meeting to order at 2:05 p.m. He acknowledged voting members of the SAC, and welcomed non-voting members Martin Frey, Director of Division of Business & Economic Development and Dave Buhler representing Rich Kendall.

Action: Motion was made by Gary Hooper to approve the minutes of the March 14, 2005 meeting; Troy Takach seconded the motion. The motion was unanimously approved.

II. Presentations – Statewide Economic Development Initiatives

a. Rate-Limiting Factors in the Technology Transfer Process – Presenters: Sheryl Hohle and Brent Brown, Associate Director of Technology Commercialization Office at the University of Utah. Their Mission Statement is to “Fulfill the University’s Academic Mission by facilitating the commercialization of the University’s scientific and technical research findings for the benefit of the citizens of Utah and the general public through the efficient and effective evaluation, management, protection, and licensing of the University’s intellectual property.”

Their Mission Goals are:

- Ensure Public benefit from University of Utah Research both through dissemination of those research results and by encouraging local economic development.
- Enhance the University’s research environment.
- Develop lasting industry relationships
- Generate revenue for the University
- Work with faculty to protect the University’s Intellectual Property (“IP”).
- Meet the University’s IP obligations to research sponsors – federal, state, and commercial.

The average timeline for the academic technology commercialization process is about eight years.

As a historical perspective on the Universities performance in both invention and idea creation and commercialization of those ideas, Brent said over the last 10 years there was an average of about 180 invention disclosures coming from the University each year. The patents issued averaged about 34 each year. Licenses, Options and Amendments executed by the Technology Commercialization Office averaged about 35. Revenue has grown quite strongly over the last 10 years. As a snapshot of the Licensees, 15.5% are start-ups that have developed specifically

around University technology, 67.5% are small companies, and 17% are large companies, and about 50% are located in Utah representing generally small companies and start-ups.

In the last 20 years the University's Spin-Offs have been:

- 15.5% of licensing deals are with new spin-offs.
- 94 Companies have spun out of the University over the last 20 years.
- 77 are still in operation (82% survival rate compared to a 60% national average. Historically licensees from Universities have a greater chance of success than the average business.)
- 82% of these remaining spin-offs have some business activity in Utah.
- 83% of all licensing revenue comes from spin-offs.

They had a list of start-up companies that have grown and continue to profit and shows the number of jobs created. The total number of jobs is 4,592.

In 1999 the university took a survey to identify the Economic Impact of the university activities to date. The survey determined:

- Induced Investments from Commercialization Activity: \$24 in induced investment in our licensee's business) for every \$1 of revenue over a 5 year period – $15M \times 24 = \$360$ million.
 - In Utah: 77% of investment stayed in Utah; 86% of the total induced investment is from start-ups.
- It is time to redo the survey, which they intend to do this year.

To give an idea of how research money is being used at the University of the \$309 million that went into the University, for every \$1.6 million of those dollars you would expect an invention disclosure. The national average is \$2.5 million for every invention, so for some reason the University is a little more efficient in using resources provided.

This program has been in existence for over 30 years, since 1969. And have been self sufficient as an office for much of that time.

Some of the activities they have undertaken are: Technology Commercialization Projects, Centers of Excellence, Virtual Incubator Projects, Lassonde Center, Technology Forum, and Business Services for start-ups.

Their recommendation is to focus on the following four areas:

- Encourage the State to increase funding to the University for Infrastructure/Basic Research
- Appreciate the State's efforts to increase Centers of Excellence Funding and continue to encourage them to expand the program.
- Ask the State to partner with the University to identify ways to provide Gap Funding Opportunities and Incentives such as research \$ matching for SBIR / STTR grants to the U's commercial partners.
- Propose that the State partner with the University to facilitate and create a U of U Incubator/Accelerator.

They feel they can provide a greater impact to the local economy by helping their young start-ups early on with opportunities they need to be successful, to reduce the average time period from idea to commercialization from eight years to a shorter period of time.

Brent mentioned the University has made a strategic decision to have their office report to and become a part of a new department in the University, which is Jack Britain's Technology Venture Development Group. As they join together, their efforts will focus on creating an entrepreneurial eco-system to provide expertise and funds to be more successful.

In regard to the Incubator Concept, Sheryl feels strongly that incubators belong in a university setting, or close proximity. The criteria are as follows:

- Utah Port of Technology (U-Port) under TCO

- Review Committee screens candidates
- Qualifications include:
 - Well-formed business plan
 - Start-up capital required
 - Solid IP base
- U-Port expertise assists in setting goals
- Lab bench/office/common room space
- Subsidized rent, paid back in future
- 3 years allowed until graduation

The economic impact of an incubator includes:

- National average of \$54 Tax revenue generated per \$1 invested in Incubator
- Within 15 years: 25 graduating companies generating \$100 Million with 800 direct jobs, and additional \$50 million generated, 400 support jobs.

The Goals of the U Port are to:

- Fill the gap between early stage concept and investor – a very long and difficult period.
- Groom idea-stage technology for sustainable growth
- Entrepreneur training is important
- Grow Utah economy
- Physical Nexus for Utah Tech/business community

In order to do this, we need:

- We need to raise \$2 million to start the incubator
 - We need \$350,000 for initial build-outs
 - They require a t2 year lease and they hope to get the university to help
 - \$750,000 per year for expenses is an ongoing process
- Innovator companies will reimburse us \$100,000 per year in rent – we're aiming for 80% occupancy
- Anticipate self-funding after 7 years.

- b. Transfer Process – Henry Nowak, Manager of Small Business Accelerator, at Utah State University's Technology Commercialization Office made his presentation on Transforming University Research into Commercial Utilization and Economic Development. Everyone in the Technology Commercialization Office has at least 20 years experience in industry and all have Ph.D.'s. Of the 22,000 students only a little over 17,000 actually attend classes on the Logan Campus, the rest are in the Extension Programs throughout the State. The University had about \$160 million in research funding last year.

The Commercialization Gap that exists between Research and Products has grown in the last half-dozen years – it started around the year 2000 with ecommerce bonds, the economic downturn, and many other things. The Gap has widened as venture capitalists have retreated from getting involved in any kind of research or potential products – they are doing less deals, but bigger deals and they want things that are moved toward commercialization. University research continues to develop ideas, and there is a need to address how to get them to the point where they can attract someone as a licensee to make a potential start-up happen. Licensees have begun to retreat more and more. In addition, the country's financial infrastructure industries have started to move to consolidation of some of the large industries and are becoming more focused on product development, marketing and distribution and less on research and development. They still want those products that are ready to be commercialized because they are flooded with early-stage ideas. At USU they are trying to bridge the gap with a number of activities – going

from University Research to Technology Development to Early Venture Development to Mature Venture Development (either as a licensee to an established company or as a start-up company that is self-sustaining). There are many things that go on between these stages. One critical thing during that time is gap funding. They have what they call an Early Technology Development Center Gap Funding desk, which gets very involved in understanding what the technology is and how they can go after SBIR/STTR funds, and how to identify a potential corporate partner. If necessary, they will spin-off their own companies, but that's not the first choice. USU has very small amounts of funding in the University Research Foundation, in \$10,000 increments. So there are small amounts to help with things such as experiments or to build a small prototype to get to the next stage. A third place to find help in early stages is the Centers of Excellence Program, which has been helpful in a number of things at USU. Also during the gap period his office gets involved in helping to work on some of the prototypes. Because their staff is from an industry background, they have a large network that they can call on to help if there is a prototype that needs to be built. And they work closely with the professors in the Engineering Department.

They also have a Business Accelerator Center to provide assistance and networking and services to allow early ventures to flourish. They provide mentoring, business assistance, learning materials, shared services, market analysis, feasibility studies, business plans and business development, local, national and international experts, access to investors and financial resources, and access to management talent. USU's Technology Commercialization Office has technical expertise and over 100 years of industry experience to apply to venture development.

They have an Entrepreneurial Team within the College of Business that focuses on the actual activity of trying to develop Entrepreneurship, and mentoring students and getting them involved in competitions, etc. The class that Henry teaches this year is a senior-level strategic management course which had the students write a business plan. In an effort to develop the next layer of entrepreneur talent, they now have nine business plans on five different projects.

The University also administers a Small Business Development Center which is more focused toward less technology-based small business, but is also available for high technology. The actual physical incubator space is separate from the Accelerator, which is housed within the USU Research Foundation located near USU Campus on 150 acres adjacent to the University. The Accelerator is really for cultivating and mentoring and the hands-on aspect. To answer the question of how many projects are underway, Henry responded in the six months he has been there he has about a half dozen projects he has developed and he is following up on some that have been around longer – for a total of about a dozen projects he is juggling.

- c. Cluster Assessment – Greg recognized the excellent work in terms of quality and quantity that Troy Takach has put in on behalf of the Council regarding the Cluster initiative. Troy gave only a “thumb-nail” report of the process. Things are moving forward at a rapid pace. Troy reported there have been three meetings – basically one per week – since the last Council meeting. They started out as more of a consulting role to provide information. They made a fairly detailed search of past Administration’s efforts in this regard. They also discussed the different programs going on at USU and at the U of U. One thing noted is that they affect what is taking place in the State, as they talk about clusters. Many people both in universities and commercial entities are now talking about what is happening in the State. Information they are getting is being put into common terminology that everyone can compare. The schedule provided is pretty aggressive, but Troy feels they will be able to keep it. He feels the way things are progressing, probably by a late June or early July timeframe there could be an announcement of what the Clusters are. Roughly speaking there will be three stages of Clusters –the top tier will basically be the one the State looks at and it will have a timeframe where at some point the State will decide they are self-

supporting and the State's input doesn't mean as much as it did previously. The second tier will be looking to move into the first tier, as they are identified. The third tier is where the State can provide assistance to find what it takes to be a cluster. He feels they are on schedule to provide answers for the Clusters. It is a rigorous process, which is mostly dominated by data right now. He feels when they get to the end the Council will be happy with the results. The role of the Science Council will be more to make sure the process has been detailed enough.

In regard to the timeline, right now there is more information needed from BYU to attempt to understand the directions of the universities. They have "cast a net" out to CEO's in companies within the State where information is needed. Sometime around the end of May or first part of June they should have an initial list to work with. The monthly Tech at Breakfast meetings are being used as a public forum for this initiative. A large email was sent to most of the major companies in the state. Martin explained what they hope to accomplish at the Tech at Breakfast meetings – the first one outlined the role of government in Cluster formation; the next one will be on the role of industry where there will be case examples of CEO's who have leveraged Clusters; the third one in May will be on what the role of universities is in Cluster development; in June hopefully the Governor will speak and announce the Clusters.

Martin announced the Centers of Excellence review is coming up in May. If any Council members want to participate they should send an email to Mike Keene to be included in the process.

III. SAC Business:

1. **State Science Advisor Search** – In reporting on the status of the search, Greg advised that over 20 candidates have submitted resumes, many of which are well qualified. The Executive Committee has begun going through the resumes and will start interviews soon with some of the candidates. The Committee was asked to forward referrals to the Governor for his consideration. A meeting between the Executive Committee and the Governor is scheduled on May 16 to discuss the outcome. Greg feels the Committee is in a good position to make some strong recommendations.
2. **Governor's Medal Planning** – Sharon reported to Greg that she has completed her assignment to evaluate the database and it is ready to go. The Council is now in a position with the database to be able broadcast a request for nominations for the Governor's Medals. The plan is for the Council to make a public announcement and post it on the website the beginning of May. Applications will be collected over the next 45 days. In June the Committee will meet to go through the evaluation criteria – looking at the four different award categories – and have the selections made and nominations given to the Governor for the September Award Ceremony.
3. **Future SAC Appointments** – Greg advised the Council should go through the list showing Committee members' tenure. A number of vacancies will be coming up soon. The best way to address this is to have a nominating committee or group of people process and submit names to the Governor for consideration to fill vacant positions that are up coming. In that regard, Greg proposed that a subcommittee be formed of two to three individuals who would like to serve in selecting the next members of the Council. Tami Goetz volunteered to help. It was suggested that as many of the Council members are not present at this meeting, it would be a good idea to broadcast an email to members to ask for participants. Greg recommended that one of the Research Vice Presidents should be on the committee also. Gary Hooper indicated his replacement will probably be known soon, and he will try to bring the person to the June Council meeting. Greg indicated that as this is not urgent to it be

done immediately, he will take Troy's suggestion to defer this item to a broader discussion with the Council at the next meeting, and list Tami as being in charge and recruit other members at the next meeting.

4. **Meeting Schedule** – The next meeting is scheduled for May 16th (same time and location), with the following meeting on June 20th. Greg mentioned the frequency of the meetings has been increased to select Clusters and take care of other items. He anticipates that the frequency might be cut back during the summer months and in moving forward, once the busy period is past. As a reminder, from a statutory standpoint the Council is required to meet once a quarter.
5. **Future Agenda Items** – Greg asked for suggestions of items for future meeting agendas. Gary was interested to hear the new State Science Advisor will have a different job description than Mike's. He also mentioned in the 10+ years he has been involved with the Council, there has never been an agenda that involved the State Science Advisory, Legislative bodies, and the Governor in any work envisioned by the Statute, and wondered if this would change and if it would be worthwhile to reopen that discussion. Greg felt when meeting with the Governor to discuss the State Science Advisor, it may be a good time to bring the issue up. He feels there could be benefit in the Council advising the Legislature as well as the Governor.

Greg mentioned it was previously discussed there is a need to discuss with the Governor how the Council can better serve, what reporting he would like from the Council, and what initiatives the Council should advise him on. Greg asked the Council to think of broad categories to discuss with the Governor. Gary said the Council created an Operating Plan about 3 years ago that listed 15 or 20 items where the Council could advise the Governor. He suggested it might be good to recover this plan from past minutes to look over. Greg asked for examples of items on the list – one was "How to create an environment conducive to having more scientists; and could the State be influenced to pay science teachers to encourage and retain science students?" Also there were a number of environmental and outreach issues, and science and technology based topics.

Action: Greg asked that the minutes reflect Gary's suggestion that the Council should take advantage of the time with the Governor, to discuss how the Council can better advise him and the legislature to fulfill the role as shown in the statute. When meeting with Governor, the Executive Committee should take along the Operating Plan document, which was put together a few years ago, to suggest areas of competency the Council has.

Adjourn: Troy Takach made a motion to adjourn the meeting, Wayne Barlow seconded the motion, all were in favor. The meeting was adjourned at 4:20 p.m.